Program Outcomes:

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. Problem analysis: Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

2015 Pattern

	Engineering Mathematics-I
C101.1	Apply the knowledge of matrices in various engineering problems.
C101.2	Solve algebraic, transcendental equations and hyperbolic functions using complex numbers.
C101.3	Analyze infinite series and explain nth derivative of functions.
C101.4	Make Use of Taylor's & Maclaurian's series to expand infinitely differentiable functions and Solve examples of indeterminate forms.
C101.5	Explain and Apply Partial and Total derivatives in various engineering problems

	Engineering Physics
C102.1	Define concepts in Engineering Physics.
C102.2	Explain concepts and applications of Optics, Acoustics, Solid State Physics, LASER, Quantum Mechanics, Superconductors and Nano Particles
C102.3	Derive formulae in Engineering Physics.
C102.4	Apply appropriate formulae to solve numericals in Engineering Physics.

	Engineering Chemistry
C109.1	DESCRIBE technology involved in improving quality of water.
C109.2	EXPLAIN basic concept of electro analytical techniques that facilitate rapid and reliable measurements.
C109.3	DESCRIBE chemical structure, properties and applications of modern engineering materials
C109.4	EXPLAIN fossil fuel and derived fuels with its properties and applications
C109.5	ILLUSTRATE chemical and electrochemical corrosion and its prevention

	Engineering Mathematics-II
C108.1	Solve first order first degree differential equations for real world problem.

C108.2	Explain Fourier representation and solve definite integrals using advanced techniques .
C108.3	Analyze curve points and trace curve to find its arc length
C108.4	Apply solid geometry to find equations of sphere, cone and cylinder.
C108.5	Solve multiple integrals to find different parameters .

	Basic Civil Environmental Engineering
C101.1	Identify basic areas of civil engineering and role of civil engineer in the completion of infrastructure projects.
C101.2	Identify and Compare different construction material, automation in construction industry.
C101.3	Illustrate the basic principles and advancement in Survey.
C101.4	Describe the concept of ecology and environment, its preservation by waste management techniques
C101.5	Identify and classify the concept of eco-friendly materials, principles and bye-laws for integrated built environment.
C101.6	Identify and describe the sources of energy, environmental pollution to find an alternative solution.

	Fundamental Programming language-I
C103.1	EXPLAIN the working of different components of computer system.
C103.2	APPLY knowledge of C programming to solve different problems.
C103.3	MAKE USE OF control structure & pointers for solving the problem.
C103.4	DEVELOP program with array, function and string.
C103.5	EXPLAIN the working of different components of computer system.

	Basic Electrical Engineering
C104.1	Define the fundamentals of resistance, work, power, energy and can convert energy in different forms.
C104.2	Make use of basic rules of electromagnetism to relate multidisciplinary machines.
C104.3	Apply concept of faradays law for demonstration of transformer working.

C104.4	Describe single phase AC circuit fundamentals.
C104.5	Solve polyphase circuits analytically and measure these result experimentally
C104.6	Illustrate basic concept of dc circuits and network theorems.

	Engineering Graphics-I
C106.1	Formulate solution to simple problems on projection of lines, planes, solids.
C106.2	Construct engineering curves such as ellipse, parabola, hyperbola, cycloid, involute, etc.
C106.3	Develop surfaces of solids.
C106.4	Create orthographic views from an isometric view.
C106.5	Create isometric view from orthographic views.

	Workshop
C107.1	To study and Practice on manufacturing of components using workshop trades including fitting, carpentry, foundry and welding
C107.2	Identify and apply suitable tools for machining processes including turning, facing, thread cutting and tapping
C107.3	To demonstrate manufacturing processes like forging, molding, Plumbing and machine tool operations including turning, facing, thread cutting, grinding etc.
C107.4	To comprehend the safety measures required to be taken while using the tools / Machines.

	Fundamental Programming language-II
C110.1	MAKE USE OF various user defined data types in C Language.
C110.2	EXPLAIN concepts of object oriented programming to solve problems.
C110.3	DEVELOP web pages using HTML.
C110.4	UTILIZE Android & Embedded C Programming concepts to develop an application.

	Engineering Mechanics
C111.1	Explain the characteristics of force, force systems and its application.
C111.2	Explain kinetics and kinematics.

C111.3	Explain and Describe work-energy and impulse momentum principle.
C111.4	Examine the equilibrium of structural members and concept of space force system.
C111.5	Calculate forces in different structural members, apply the laws of friction.

	Basic Mechanical Engineering
C113.1	Categorise various mechanical elements and power transmission devices.
C113.2	Describe design process, types of materials with their applications, types of mechanisms.
C113.3	Describe different manufacturing process with their applications.
C113.4	Illustrate working principle and operations of machining tools.
C113.5	Evaluate performance parameters of heat pump, heat engine and refrigerator.
C113.6	Categorise basic elements of power plant engineering.
	Engineering Graphics-II
C114.1	Formulate solution to simple problems on projection of solids through AUTOCAD
C114.2	Generate engineering curves using AUTOCAD
C114.3	Generate surfaces of solid using AUTOCAD
C114.4	Create orthographic views from an isometric view using AUTOCAD
C114.5	Create isometric view from orthographic views using AUTOCAD
	Basic Electronics Engineering
C112.1	IDENTIFY & DESCRIBE basic components used in Analog, digital & power electronics circuits.
C112.2	EXPLAIN the working and calculate basic parameters of electronics circuits and communication system.
C112.3	EXPLAIN basic principle of transducers and their applications.
C112.4	IMPLEMENT basic electronic circuits.
C112.5	Improve written and oral skills related to Basic Electronics Engineering and engage in life-long learning.